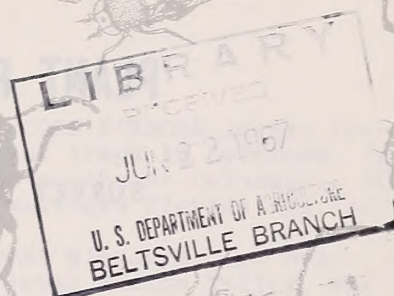


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VOL. 17 No. 24

June 16, 1967



Cooperative **ECONOMIC INSECT REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

ARMYWORM damaging small grains in several areas. CORN EARWORM larvae heavy on corn in areas of Alabama and Arizona; moths in light traps in Colorado. (p. 501). POTATO PSYLLID buildup high on wild host plants in southeast Colorado. TOBACCO BUDWORM remains serious on flue-cured tobacco in northern Florida. (p. 502).

EUROPEAN CORN BORER egg masses reported in northwest Missouri. (p. 502). CORN FLEA BEETLE heaviest since 1954 on sweet corn in lower Hudson Valley, New York; injuring field corn in Delaware. (p. 503).

ALFALFA WEEVIL continues damaging in many areas. (p. 506). PEA APHID populations high on alfalfa in Arkansas, Missouri, and Nevada; increasing in Minnesota. (pp. 507, 508). THREE-CORNERED ALFALFA HOPPER increasing on soybeans in Mississippi. (p. 508, 509). TOBACCO THRIPS damaging peanuts in several areas of Alabama. (p. 509). Overwintered BOLL WEEVILS present in large numbers in western Tennessee; emergence also heavy in Alabama and southern Georgia; punctured squares reported in several areas. THRIPS damaging cotton in western Tennessee and south-east Missouri. (pp. 509, 510).

POTATO TUBERWORM present in large numbers on Virginia Eastern Shore. (p. 512). ONION THRIPS increasing and damaging onion transplants in Arkansas Valley area of Colorado. (p. 513).

EUROPEAN PINE SAWFLY defoliating some pines in areas of Ohio. (p. 519). HORN FLY increasing in New Jersey; heavy in Oklahoma and Mississippi.

PINK BOLLWORM adults trapped in several areas of California; moth catches increased in Arizona. (p. 522).

Detection

New State records include a FULGORID PLANTHOPPER, a MELANDRYID BARK BEETLE, a SCARAB, and TWIG GIRDLER in Delaware. (p. 524). For new county and island records see page 524.

ALFALFA WEEVIL and CEREAL LEAF BEETLE reported in eastern Canada. (p. 524).

Prediction

CHINCH BUG expected to be of minor importance in Indiana during 1967. (p. 504).

Reports in this issue are for week ending June 9 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING JUNE 12, 1967

HIGHLIGHTS: Hot and humid with frequent showers and outbreaks of violent weather over mid-America. Cool, dry, much of West and Southeast.

PRECIPITATION: A stationary front persisted for the entire week in an area from Colorado to the upper Great Lakes. The front marked the clash between hot moisture laden gulf air and cooler air from the North. As the front refused to move, violent weather became widespread and frequent. Tornadoes, severe thunderstorms, hail, high winds, and many heavy showers occurred from Idaho to Illinois and southward to Texas. Florida also received some generous rains from another system. Hail as large as baseballs fell near Akron, Colorado. Showers dumped 6 to 7 inches of rain at Verdigris, Nebraska, and 8 inches at Muscatine, Iowa. The violent weather increased as the weekend approached. More than 100 twisters were seen - mostly in eight States from Colorado and Oklahoma to Wisconsin and Illinois. The storms caused injuries, but relatively few deaths. Many trees were uprooted, power lines downed, and buildings destroyed. The heavy showers flooded highways, washed out bridges, and flooded low-lying farm lands. Soil moisture was improved in the Dakotas, Montana, and Minnesota. Not all areas received rain. A wide belt from the lower Rio Grande and extending northeastward to the Atlantic coast from New England to North Carolina received little or no rain. Rainfall was also lacking or light over southern California and Arizona.

Weather continued on page 519.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMYWORM (*Pseudaletia unipuncta*) - KANSAS - Damaged broom and wheat in Johnson County. (Gates). MISSOURI - Heavy in wheat in Carroll County. Third and fourth instars ranged 3-35 per square foot. Ranged 2-15 per square foot in central area. Light in east-central and northeast areas. Larvae moving from wheat to other crops in north-central areas. Controls underway in central and north-central areas. (Munson). ILLINOIS - Larvae damaged south-central and central area wheat; aerial treatment extensive. (Moore, Kuhlman). MICHIGAN - In blacklight traps in greater than normal numbers. (Newman). VIRGINIA - Larvae feeding on barley in 4 fields in Culpeper County; up to 6 second and third instars per square foot. (Isakson, Heltzel). MARYLAND - Several infestations in small grains in Somerset and Worcester Counties. (U. Md., Ent. Dept.). DELAWARE - Young larvae in barley in Sussex County (MacCreary); adults averaged 2 per night in blacklight trap collections in county (Burbutis). MASSACHUSETTS - First 3 moths of season in blacklight trap at East Wareham, Plymouth County, June 2. (Tomlinson).

BEEF LEAFHOPPER (*Circulifer tenellus*) - COLORADO - Averaged 0.2 per square foot on sugarbeets in 8 to 12-leaf stage in Loma, Mack, and Fruita areas of Mesa County, June 1. Light in all fields checked. (Bulla).

CORN EARWORM (*Heliothis zea*) - ALABAMA - Larvae heavy in silking corn in central and southern areas. Egg laying underway; 1-5 eggs per ear common. (McQueen). TEXAS - Light to occasionally heavy and feeding in ears of corn and on tomatoes throughout Jasper County. Larvae as high as 3-4 per ear of corn and per tomato. In some instances, as many as 3 of 6-10 tomatoes per plant infested. (Gaskamp). COLORADO - Moths taken in light trap at Fruita, Mesa County, in late May and early June; 12 in one 7-day period. (Bender, Bulla). ARIZONA - Heavy (140 per 100 plants) in corn near Coolidge, Pinal County. Repeated controls necessary. (Ariz. Coop. Sur.).

CORN LEAF APHID (*Rhopalosiphum maidis*) - ALABAMA - Widespread in all corn in State. Maize dwarf mosaic reported widespread in early corn in Shelby County; 95-100 percent of stalks affected in some fields. (Clark). MISSISSIPPI - Averaged one alate per whorl in 19 percent of corn plants 6-8 inches tall in Oktibbeha County field. In Yazoo County, smaller percentage of young plants infested, but infestations per plant much heavier. (Dinkins). TEXAS - Heavy on Sudan grass near Giddings of Lee County. (Spivey). NEW MEXICO - Light to moderate on oats and barley in Roswell, Chaves County. (Mathews). OKLAHOMA - Moderate to heavy in Sudan grass near Marshall, Logan County. Lady beetles numerous. (Okla. Coop. Sur.). KANSAS - Light, 1-15 per plant, on corn and sorghum in Cowley, Butler, Chase, Lyon, Shawnee, Jefferson, and Atchison Counties. Most adults winged; some young nymphs. (Simpson). UTAH - This and a second species very numerous on dryland wheat over large areas at Monticello, San Juan County. (Knowlton).

GREENBUG (*Schizaphis graminum*) - KENTUCKY - Caused much damage to wheat in Fulton County. Ranged 5,000-10,000 per square foot on 6,000-7,000 acres. As many as 1,000 aphids on some plants; averaged 200 on many leaves. In some instances, numbers so heavy, wheat plants had fallen to ground. (PPC Cent. Reg., Apr. Rpt.). WISCONSIN - Increasing slowly in Iowa, Grant, and Columbia Counties; averaged 4 per 50 sweeps. (Wis. Ins. Sur.). MINNESOTA - Low in south-central, southwest, and central districts; none found in west-central and northwest districts. (Minn. Ins. Rpt.). NORTH DAKOTA - Light in Sargent County; 5 per 100 sweeps on spring wheat. (Brandvik).

POTATO LEAFHOPPER (*Empoasca fabae*) - COLORADO - Ranged 5-25 per 100 sweeps of potatoes at Gilcrest, Weld County. (Urano). INDIANA - First nymphs of season on alfalfa in southwest and south-central districts. Ranged 2 per 5 sweeps to 2 per sweep. (Huber). MARYLAND - First adults of season swept from alfalfa near Upper Marlboro, Prince Georges County, June 5. (U. Md., Ent. Dept.). DELAWARE - Adults present on potatoes in eastern Kent County. (Burbutis, June 2).

POTATO PSYLLID (Paratrioza cockerelli) - UTAH - Single specimen taken in 25 sweeps on matrimony-vine at Sandy, Salt Lake County, and 2 at Gunnison, Sanpete County. (Knowlton, May 27). COLORADO - Continues low on matrimony-vine in Weld County; 10-20 per 100 sweeps. Very light on potatoes in Weld County; 0-4 per 100 sweeps. In Otero and Bent Counties, averaged less than 1 per 100 sweeps; however, buildup on wild host plants high; 700-1,600 per 100 sweeps. (Urano et al.). None found on tomatoes in Arkansas Valley. (Schweissing).

SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) - IOWA - Ranged 1-10 per 10 sweeps in Decatur County alfalfa. (Iowa Ins. Sur.). MINNESOTA - Very low in northern half of State. Ranged 20-130 per 100 sweeps on small grains in south-central and southwest districts; averaged 40-50 per 100 sweeps in most fields. (Minn. Ins. Rpt.). WISCONSIN - Dispersal in grain apparently decreased; averaged 8 per 50 sweeps in Iowa, Columbia, and Grant Counties, compared with 12 per 50 sweeps last period. (Wis. Ins. Sur.). MICHIGAN - Numbers declined. (Guyer, June 5).

SPOTTED ALFALFA APHID (Therioaphis maculata) - NEW MEXICO - Generally light on alfalfa with isolated fields showing increased buildups. (N. M. Coop. Rpt.). COLORADO - Still found in few fields in Pueblo, Crowley, Otero, Bent, and Prowers Counties. Populations average less than 10 per 100 sweeps. Very light trace reported in area south of Johnstown, Weld County. Considering prevailing weather, it is unusual this aphid is found in northern area. (Schweissing, Carter). KANSAS - None in alfalfa checked in Sumner, Sedgwick, Cowley, Butler, Chase, Morris, Lyon, Wabaunsee, Riley, Pottawatomie, Jackson, Jefferson, Atchison, Brown, and Nemaha Counties. (Simpson). OKLAHOMA - Averaged 50 per 10 sweeps in alfalfa in Jackson County. Probably this species, heavy in Pontotoc County alfalfa. (Okla. Coop. Sur.). ARKANSAS - Survey negative in Crawford County. (Ark. Ins. Sur.).

TOBACCO BUDWORM (Heliothis virescens) - FLORIDA - Remains serious on flue-cured tobacco in northern area. (Kuitert).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - NEW YORK - First moth in emergence cage at Highland June 5. (N. Y. Wkly. Rpt.). DELAWARE - Adults increased in blacklight trap collections in Sussex County; averaged 9 per night. Adults observed throughout State in weeds, pepper seed beds, and potato fields. (Burbutis). MARYLAND - Adults averaged 5 per night in blacklight traps on Eastern Shore. (U. Md., Ent. Dept.). OHIO - Blacklight trap collections indicate moths much more common in central area. (Rose). First adult June 5 in Wayne County. (Barry). MICHIGAN - First males from traps in early June in Lenawee, Macomb, and Livingston Counties. (Newman). ILLINOIS - Adult emergence percentages by district: Southern 100, south-central 28, central 32, and north-central 24; north district pupation 84 percent. (Moore, Kuhlman). IOWA - Adults light in south-central, central, and southeastern areas. (Brindley et al.). MINNESOTA - Pupation low in southwest, west-central, and central districts. (Minn. Ins. Rpt.). KANSAS - Adults numerous in weeds and grasses bordering corn in Shawnee, Jefferson, Atchison, Brown, and Nemaha Counties. Blacklight trap catches increased in Brown County. (Simpson). MISSOURI - Larvae moderate to heavy on early corn in southwest area. Leaf feeding on 90 percent of plants 56 inches tall with leaves extended. In Dade County, leaf feeding on 68 percent of 48-inch corn and 40 percent on 38-inch corn. First and second instars ranged 2.5-11 per infested plant. In northwest area, fresh egg masses averaged 3 per plant on 24 to 30-inch corn. Leaf feeding damage as high as 16 percent of plants on 34-inch corn in east-central area; no larvae found in this field. (Munson).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - GEORGIA - Heavy in Decatur County corn. (Wheeler).

BLACK CUTWORM (Agrotis ipsilon) - INDIANA - Early instars averaged 2 per 100 feet of row on corn in Jay and Clinton Counties. (Gould). ILLINOIS - Damaged corn in north-central, central, and south-central area fields. (Moore, Kuhlman). MISSOURI - Larvae fed on corn in central area. Stands reduced 1 percent in some fields in Boone and Audrain Counties. (Munson). WISCONSIN - Damage noticeable on corn in Waushara, Marquette, Portage, southern Trempealeau, and some portions of Columbia Counties. In Columbia County, damaged corn previously in sod. In Waushara County, damage extensive enough to warrant some replanting. (Wis. Ins. Sur.). SOUTH DAKOTA - Heavy, 1-4 larvae per hill (average 2), in 50-acre corn field northeast of Madison, Lake County. Most plants clipped off; in many large areas not a single plant standing. (Berndt).

PALE WESTERN CUTWORM (Agrotis orthogonia) - KANSAS - Larvae still present and damaging row crops in southwest. (Gates). OKLAHOMA - Probably this species has materially reduced stand of 4-inch corn in Texas County. Field will be replanted. (Okla. Coop. Sur.).

DINGY CUTWORM (Feltia subgothica) - NEBRASKA - Damaged corn on soil bank land in Scotts Bluff County. (Hagen).

CORN FLEA BEETLE (Chaetocnema pulicaria) - NEW YORK - Moderately active in commercial sweet corn areas of Ulster County. Three sprays by May 31 gave good control on 4-leaf corn, but high temperatures June 1-2 increased activity; untreated 2-leaf corn in Dutchess County had 10-20 beetles per 100 plants by June 1, heaviest since 1954. Inspections made to determine northern limits of winter survival in Hudson Valley: Beetle signs at south edge of Rensselaer Village, none at Castle-ton bridges, and present at Middlebury, Schoharie County. (N. Y. Wkly. Rpt., June 5). DELAWARE - Adults numerous; causing noticeable injury to field corn in areas of Kent and Sussex Counties. (Burbatis). MARYLAND - Adults averaged 1 per plant on sweet corn near Centreville, Queen Annes County. (U. Md., Ent. Dept.). OHIO - First flea beetle occurrence of season, probably this species, reported on corn in Darke County. (Jones).

FLEA BEETLES - KANSAS - Damage to corn continues in northeast. (Kan. Ins. Newsltr.). VIRGINIA - Adults light on corn at Steeles Tavern, Rockbridge County. (Woodside).

SUGARCANE BEETLE (Euetheola rugiceps) - ALABAMA - Adults again present in 75-acre field of corn in old sod land in Dallas County; field previously destroyed and replanted. Beetles being controlled with soil insecticides very satisfactorily. Numerous dead and dying adults observed. (Spir).

SEED-CORN BEETLE (Agonoderus lecontei) - ILLINOIS - Extensively injured Adams County cornfield; moderately damaging corn in Tazewell, Lee, and De Kalb Counties. (Moore, Kuhlman).

WIREWORMS - ILLINOIS - Severely damaged corn in De Witt County fields. (Moore, Kuhlman). NEW YORK - Field of corn planted May 18 in Livingston County contains one half-grown Limonius agonus larva per kernel; stand established despite infestation. (N. Y. Wkly. Rpt., June 5).

WHITE GRUBS - MINNESOTA - Damaging corn in Redwood County. (Minn. Ins. Rpt.). NEBRASKA - Larvae in Kearney County cornfield averaged about 3 per square foot. (Keith, Beland, June 2). MISSOURI - Phyllophaga spp. adults emerging from corn in southwest area field. Stand reduced earlier in season, probably by larvae. (Munson).

SORGHUM MIDGE (Contarinia sorghicola) - TEXAS - Due to rather early spring, economic populations in few sorghum fields. (Texas Coop. Rpt.). Very sporadic, but economic infestations of 6-8 adults per head near Ben Arnold, Milam County, (Moore), and near Hearne, Robertson County, (Randolph). Adult populations in all of many fields checked from Jackson, De Witt, Karnes, and Atascosa Counties north to Hill, Bosque, and Comanche Counties, considered noneconomic and do not warrant controls. Few midges found in several fields indicating first major generation will emerge during mid-June. (Texas Coop. Rpt.).

SEED-CORN MAGGOT (Hylemya platura) - NEW JERSEY - Total of 521 adults taken on 5 sticky boards at Cedarville; ranged 61-186 June 5. (Ins.-Dis. Newsltr.).

THRIPS - MISSOURI - Damaged small corn in southwest area; ranged 5-20 per plant in scattered fields. (Munson).

GARDEN SYMPHYLAN (Scutigerella immaculata) - COLORADO - Damaged corn in Kuner area, Weld County. (Rothe).

SLUGS - VIRGINIA - Damaging sod-planted corn in Alleghany County. (Isakson, Copehaver, June 2). Feeding on 2 to 6-inch sod-planted corn in Pulaski County. (Isakson).

SMALL GRAINS

ENGLISH GRAIN APHID (Macrosiphum avenae) - MICHIGAN - Adults and nymphs still widespread in wheat; becoming established in most oats sampled. (Dowdy). WISCONSIN - Increasing slowly, 20 per 50 sweeps, in Iowa, Grant, and Columbia Counties. (Wis. Ins. Sur.). NORTH DAKOTA - Remains low in all areas; highest, 10 per 100 sweeps, on Richland County spring wheat; 4 per 100 sweeps in Pembina County. (Brandvik). MINNESOTA - Low in south-central, southwest, and central districts; none found in west-central and northwest districts. (Minn. Ins. Rpt.). ARIZONA - Light on barley in Kansas Settlement area, Cochise County. No apparent damage. (Ariz. Coop. Sur.). CALIFORNIA - Medium on 40-acre oat planting in Dos Palos, Fresno County. (Cal. Coop. Rpt.).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - WASHINGTON - Averaged 50 per wheat plant in Eltopia field, Franklin County; unusual abundance past month probably due to mild winter. (Johansen, June 5).

CHINCH BUG (Blissus leucopterus) - INDIANA - Overwintering survival in 52 bunch grass samples collected March 21-23 in west-central and east-central districts noneconomic; only 3 had more than 50 per square foot: 60 adults at Ade, Newton County, 81 at Geneva, Adams County, and 91 at Eaton, Delaware County. Potential importance in 1967 predicted as minor in State. (Huber, June 5).

RICE WATER WEEVIL (Lissorhoptrus oryzophilus) - ARKANSAS - Numbers probably higher than for past few years although no standard counting methods systematically used. Traditionally controlled by drainage. Timing based on degree of root pruning. Control by automatic seed treatment very effective for several years prior to 1966 when species became resistant. Numbers probably built up last year. Sticky boards in rice fields being tried as survey tool for adults. No weevils taken by June 5 on boards placed in fields June 2; however, 3,000 weevils taken by June 7 on 48 small plots in Arkansas County. No prior records available for comparison. (Tugwell). TEXAS - Larvae moderate and damage light in field of rice near Bay City, Matagorda County. (Vestal).

WHITE GRUBS (Phyllophaga spp.) - NORTH DAKOTA - Ranged 3-5 per square foot; damage moderate to heavy in small grain fields in McIntosh, Dickey, and Pembina Counties. (McBride).

BROWN WHEAT MITE (Petrobia latens) - UTAH - Damaged at least 20,000 acres of fall dryland wheat in San Juan County, largely at Monticello area. One grower plans to spray 3,000 acres. (Knowlton, Jones).

TURF, PASTURES, RANGELAND

GRASS BUGS - UTAH - Irbisia spp. conspicuously marking 5 percent of giant ryegrass examined in Logan Canyon, Cache County, and occasional plants in the Pickleville and Laketown area of Rich County. A green grass bug more numerous in one area near Bear Lake, causing discoloration. Irbisia pacifica severely discolored and

bleached 3,000 acres of range planted grasses in vicinity of and in mountains about Beaver Dam, Box Elder County. Population 80 percent winged adults. As many as 50-800 per clump of grass. (Knowlton). Labops hesperius damaged 400 acres of planted range grasses in area 20 miles east and 2 miles north of Saline, Sevier County. (Rickenbach, Knowlton). Up to 1,000 L. hesperius or more per square foot in an area of Kanab Creek; only 5 percent adults. At lower elevations, including Sheep Creek, populations largely adult. Mating underway; populations spotty and damage conspicuous wherever numerous. Lower in Pines area, but generally highest in East Fork area, Garfield County. Apparently lower than 1966 in several areas. Aerially sprayed 1,400 acres in control tests. (Thornley, Knowlton). Irbisia spp. and other grass bugs moderately discoloring giant rye grass and other grasses in Huntsville and Eden area of Weber County. (Knowlton). NEW MEXICO - Surveys in Santa Fe National Forest and adjacent areas during May showed L. hesperius caused limited damage to crested wheatgrass plantings in most reseeded areas. Hatched about one month earlier than previously since pest has been under observation. (PPC).

A CHINCH BUG (Blissus insularis) - TEXAS - Moderate to heavy with damage noted in St. Augustine grass lawns throughout Seguin, Guadalupe County. (Massey).

RANGE CATERPILLAR (Hemileuca oliviae) - NEW MEXICO - Limited survey made in untreated area in Colfax County May 24. Egg masses plentiful in much of area, but no hatching observed. Collected egg masses hatched at room temperature in 48-72 hours. (PPC).

BLUEGRASS WEBWORM (Crambus teterrellus) - KANSAS - Moths unusually heavy for this time of year in Riley County. (Brooks).

A PYRALID MOTH (Surratha indentella) - KANSAS - Up to 240 sixth-instars per square foot, mostly on golf courses, in Ellsworth, Rice, Kingman, Pawnee, and Meade Counties; considerable damage to buffalo grass in infested spots. (Thompson).

WHITE GRUBS - NORTH DAKOTA - Ranged 3-5 per square foot; damage moderate to heavy in pastures in fields in McIntosh, Dickey, and Pembina Counties. (McBride). NEBRASKA - Phyllophaga anxia and others severely damaged pastures in Buffalo, Hall, Kearney, Pierce, Phelps, and Polk Counties. (Keith et al.).

THRIPS - ARIZONA - Chirothrips spp. ranged 1-4 per boot in Bermuda grass seed fields in lower Yuma Valley and the Texas Hill area of Yuma County. (Ariz. Coop. Sur.). NEW MEXICO - Adults and larvae of Anaphothrips obscurus and A. zeae abundant on several cool season grasses (Agropyron spp.) grown under irrigation at Los Lunas, Valencia County. Chirothrips simplex females common on several cool and warm season grasses grown under cultivation in same area. C. mexicanus present in typically small numbers. Most, if not all, adults presumed to be overwintered females. No males observed. (Watts).

A CHLOROPID FLY (Scatonia graminivora) - NEW MEXICO - This recently described species building up rapidly on cultivated alkali sacaton (Sporobolus airoides) at Los Lunas, Valencia County. First adults of season taken May 5; rapid buildup apparent last week in May. Third instars found May 29. (Watts).

BERMUDAGRASS MITE (Aceria neocynodonis) - OKLAHOMA - Light on many lawns in Oklahoma County, but severe on occasional lawn. (Okla. Coop. Sur.). TEXAS - Moderate on Bermuda grass lawns in Abilene, Taylor County, and in Houston, Harris County. (Crain, Fruman).

GRAY GARDEN SLUG (Deroceras reticulatum) - CALIFORNIA - Medium on dichondra and Bermuda grass turf in Highland, San Bernardino County. (Cal. Coop. Rpt.).

FORAGE LEGUMES

ALFALFA WEEVIL (*Hypera postica*) - VERMONT - Averaged 1 adult per 3 sweeps and larvae up to fourth instar, 1 per 2 sweeps. (MacCollom, June 5). MASSACHUSETTS - In 5 Hampshire County fields, adults 0-4 per 100 sweeps, larvae 5-256; damage obvious in fields with high larval counts. In 6 Berkshire County fields, adults 7-30 per 100 sweeps, larvae 0-98. (Miller, June 2). RHODE ISLAND - Larvae feeding at Glocester and Johnston, Providence County; very few larvae but many eggs in field at Kingston, Washington County. (King, Mathewson, June 1). CONNECTICUT - Larval feeding heavy in Southbury area; 70 percent of tips injured; 10 percent of tips injured at Northford. (Kemmerer, June 7). Numerous adults in Woodstock and Plainfield area; some fields show 50 percent of tips damaged. (Roberts, June 7). At Storrs: 10 adults and 32 larvae per 100 sweeps, no eggs as of June 5; larval injury not evident. (Savos). NEW YORK - In Livingston County, 10 larvae per 10 sweeps, 1 adult per 30 sweeps. In Allegany County, larvae only found 3 miles south of Wellsville, 6-10 per 10 sweeps; adults 1-2 per 10 sweeps. Eggs not easily found in any area. Alfalfa 6-10 inches high. Larval numbers increased with warm temperatures in Tompkins, Tioga, Ulster, and Rensselaer Counties; increased 10-fold (30-50 per sweep) in an Ulster County field. Most larvae small, but approaching third or fourth instar in Ulster County field where alfalfa half vegetative and half in bud stage. Most fields 30-40 percent damaged in Rensselaer County; one field 50 percent or more damaged. Controls applied or underway. (N. Y. Wkly. Rpt., June 5). Eggs and adults reported in Oswego and Wayne Counties in CEIR 17(22):458. Adults, eggs, and larvae reported in Livingston County in CEIR 17(23):480. These are new county records. (PPC). NEW JERSEY - Many growers apply stubble sprays in central and southern counties. (Ins.-Dis. Newsltr.).

ALABAMA - Established stands of white clovers damaged earlier at Tallassee in Elmore County and in Madison County recovered from damage by first-generation larvae and adults. No permanent damage apparent to established stands of Regal or other white clovers. Regal clover and alfalfa planted in fall of 1966 in mixture with orchard grass and ryegrass in 30-acre field in Madison County completely destroyed this spring. (Johnston, Andrews). MISSISSIPPI - Shortly before second cutting of alfalfa in Pontotoc County field, 50 sweeps made with 15-inch net in area flame treated in February, and in untreated area; 41 adults and 62 larvae taken in treated area, 57 adults and 108 larvae taken in untreated area. (Dinkins). OHIO - Continues most destructive insect in State. First cutting of alfalfa hay nearly 20 percent completed June 5. (Ohio Crop & Weather Bull.). Feeding damage in untreated cases 50-100 percent; loss high in heavily infested fields; hay stubble treated in Medina, Wayne, and Ashland Counties. More damaging in Holmes County field where only grass remains. Most sprays successful but control inadequate in some instances probably due to faulty application. Pupation begun; cocoons present in northeastern area. (Glass, Niemczyk). Larvae ranged 55-120 per sweep in alfalfa sampled in Holmes, Coshocton, and Franklin Counties. Damage apparent on 60-90 percent of leaves; crop loss estimated 20-70 percent. (Rose). MICHIGAN - Light at Fariss, VanderVeen, and Cooper in Cass, Berrien, and Clinton Counties. These are new county records. (Newman). INDIANA - Generally light to moderate on second-growth alfalfa in southern districts. All stages present; larvae average 2 per sweep on treated, 21 per sweep (range 15-36) on untreated second-growth alfalfa. (Huber). ILLINOIS - Rapidly declining in southern area; migration of new adults from alfalfa beginning. (Armbrust). Found for first time in Warren, Henderson, Mercer, Boone, McHenry, and Mason Counties. (Armbrust).

SOUTH DAKOTA - Increasing in Lawrence and Butte Counties June 1-7. Greater variability than in 1966. Up to 60 adults and 20 larvae per 100 sweeps in southern Butte County, with other fields up to 60 larvae and 10 adults. Hatch well underway near Spearfish, Lawrence County, with up to 200 (mostly first instar) per 100 sweeps. Some damage to alfalfa apparent. (Jones). NEBRASKA - Young larvae 12 per 10 sweeps on alfalfa in Scotts Bluff and Morrill Counties. (Hagen). COLORADO - Larvae decreased in Pueblo, Crowley, Bent, and Prowers Counties; 0-500 per 100 net sweeps. Ranged 260-2,600 per 100 sweeps in Weld County alfalfa; controls recommended. Larvae moderate to heavy, with first cutting of alfalfa underway in Mesa, Delta, Garfield, and Montrose Counties. Adults averaged 39 per 100 sweeps

and damage moderate in Larimer County; larval numbers high. (Schweissing et al.). NEW MEXICO - Heavy in alfalfa in Sandoval and Bernalillo Counties. (Heninger). NEVADA - Infestations of 50-80+ larvae per sweep general in Carson Valley, Douglas County; damage medium to heavy. Spraying to begin as weather permits. (Munk). Larvae increasing in Lovelock, Pershing County; 10-30 per sweep in many fields. Controls applied to some other fields where counts slightly higher (above 30 per sweep). Control results erratic due to unsettled weather. (Martinelli). OREGON - Larvae damaging alfalfa in Crook County. Counts during week ending June 2 averaged approximately 15 per sweep. (Dickason).

LESSER CLOVER LEAF WEEVIL (Hypera nigrirostris) - VERMONT - Adults numerous on trefoil. (MacCollom, June 5). MISSOURI - Adults numerous in red clover in central and north-central areas; ranged 20-110 per 10 sweeps. Only occasional larva collected. (Munson). KANSAS - Adults averaged 8-10 per 10 sweeps in red clover in Brown and Nemaha Counties. (Simpson).

SWEETCLOVER WEEVIL (Sitona cylindricollis) - MINNESOTA - Feeding damage on lower leaves in old stands of sweetclover in northwest district; crop vigorously outgrowing damage. (Minn. Ins. Rpt.). NORTH DAKOTA - Adults on sweetclover ranged 1-120 per 100 sweeps in Dickey, Emmons, and Morton Counties; up to 25 percent of leaves consumed on all plants. Counts in northeast ranged 6-150 per 100 sweeps (averaged 50); feeding less evident. (Brandvik). UTAH - Adults very numerous; severely damaged sweetclover leaves near Laketown, Rich County. (Knowlton).

CLOVER ROOT CURCULIO (Sitona hispidula) - MARYLAND - Adults averaged 2 per 10 sweeps on red clover near Centreville, Queen Annes County. (U. Md., Ent. Dept.). KANSAS - Adults low to moderate, 3-20 per 10 sweeps, on alfalfa in Butler, Cowley, and Sumner Counties. (Simpson).

BEAN LEAF BEETLE (Cerotoma trifurcata) - KANSAS - Low, 0-3 per 10 sweeps, in many southeast and east-central district alfalfa fields. (Simpson).

A CARRION BEETLE (Silpha bituberosa) - IDAHO - Nearly full-grown larvae damaging 40 acres of alfalfa hay near Grace, Caribou County. Infestation widespread over field; this is unusual for species. (Alldaffer).

A FLEA BEETLE (Systema bitaeniata) - ARIZONA - Adults feeding heavily on alfalfa leaves in 10-acre field in Graham County. Apparently migrating from desert areas. (Ariz. Coop. Sur.).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - MICHIGAN - First of season in Berrien, Cass, Van Buren, and Kalamazoo Counties. (Newman, June 5).

ALFALFA CATERPILLAR (Colias eurytheme) - COLORADO - Larvae appearing in some Pueblo County alfalfa; 0-20 per 100 sweeps. In area south of Johnstown, Weld County, counts 0-60 per 100 sweeps. (Schweissing, Urano).

ALFALFA LOOPER (Autographa californica) - OREGON - Second and third instars present in all alfalfa of Benton County and in Jefferson, Brooks, and Woodburn areas of Marion County. Averaged 1-3 per 50 sweeps. First appeared last year during early July. (Morrison).

VARIEGATED CUTWORM (Peridroma saucia) - OREGON - No economic populations reported this year in western part of State. (Morrison).

GREEN CLOVERWORM (Plathypena scabra) - KANSAS - Low, 0-2 per 10 sweeps, in many northeast and north-central alfalfa fields. (Simpson).

PEA APHID (Acyrtosiphon pisum) - NEVADA - Varied 5-100 per sweep in most Carson Valley alfalfa in Douglas County. (Munk). Varied 15-40 per sweep in Lovelock, Pershing County; averaged 6 per sweep in Reese River, Lander County. (Martinelli). COLORADO - Some population decrease noted in Pueblo, Crowley, Otero, Bent, and Prowers Counties, but remains high in many fields not cut. Ranged from zero to

over 5,000 per 100 sweeps. In Weld County, numbers building up, but not sufficient to warrant control. In Larimer County, numbers moderate, damage low. (Schweissing et al.). NEW MEXICO - Light to moderate in alfalfa over State, with heavier populations noted in isolated instances. (N. M. Coop. Rpt.). TEXAS - Light to moderate on vetch throughout Delta County. Clustering on growing parts as well as on pods. Wet weather also causing much damage. (Turney). ARKANSAS - Continues heavier than usual for time of year in alfalfa, but declining. Ranged 200-300 per 100 sweeps in Crawford County. Decline expected to continue with higher temperatures and less rain. (Ark. Ins. Sur.). MISSOURI - High numbers observed on alfalfa in southwest area; 80-2,500 per 10 sweeps. Populations lower in west-central and central areas; 20-500 per 10 sweeps. (Munson). KANSAS - Low in alfalfa throughout eastern half of State. Ranged 0-5 per 10 sweeps in Butler and Cowley Counties to high of 65 per 10 sweeps in Chase and Lyon Counties. Very low, 0-5 per 10 sweeps, in red clover in Brown, Atchison, and Jefferson Counties. (Simpson). NEBRASKA - Averaged 21 per 10 sweeps in Scotts Bluff and Morrill County alfalfa. (Hagen). NORTH DAKOTA - Ranged 3-250 (average 56) per 100 alfalfa sweeps in northeast area. (Brandvik). MINNESOTA - Continues to increase on alfalfa; ranged 60-2,000 per 100 sweeps. Predators increasing, but not rapidly. (Minn. Ins. Rpt.). WISCONSIN - General increase. Ranged 20-80 per 10 sweeps in alfalfa in Dane, Iowa, Grant, Columbia, Marquette, and Dodge Counties with an average of about 30 per 10 sweeps. (Wis. Ins. Sur.).

CLOVER APHID (Nearctaphis bakeri) - WASHINGTON - Up to 50 per stipule in uncut red clover seed field near Eltopia; probably survived mild winter on red clover. (Johansen, June 5).

SWEETCLOVER APHID (Therioaphis riehmi) - NORTH DAKOTA - Ranged up to 50 per 100 sweeps (averaged 31) on sweetclover in Dickey, Emmons, and Morton Counties. (Brandvik).

TARNISHED PLANT BUG (Lygus lineolaris) - VERMONT - Adults numerous on trefoil. (MacCollom, June 5). MARYLAND - Adults averaged 2 per 10 sweeps on red clover near Centreville, Queen Annes County. (U. Md., Ent. Dept.). IOWA - Ranged 8-15 per 10 sweeps in Decatur County alfalfa. (Iowa Ins. Sur.).

PLANT BUGS (Adelphocoris spp.) - MINNESOTA - Hatching on alfalfa in southern half of State. A. rapidus and A. lineolatus ranged 10-700 per 100 sweeps. (Minn. Ins. Rpt.). IOWA - A. lineolatus ranged 18-55 per 10 sweeps in Decatur County alfalfa. (Iowa Ins. Sur.).

LYGUS BUGS (Lygus spp.) - NEVADA - Varied 1-5 per sweep in Carson Valley, Douglas County, and Reese River, Lander County. Infestations spotty. (Martinelli, Munk). COLORADO - Nymphs and adults at low levels in Larimer County alfalfa. (Sower). KANSAS - Remain low, 6-12 per 10 sweeps, in most eastern area alfalfa. (Simpson). NEBRASKA - Numbered 5 per 10 sweeps in Scotts Bluff and Morrill Counties. (Hagen).

MEADOW SPITTLEBUG (Philaenus spumarius) - MARYLAND - Nymphs heavy, over 3 per stem, on red clover near Centreville, Queen Annes County. First adults of season found June 6 on red clover. (U. Md., Ent. Dept.). OHIO - Adults comprise 50 percent of numbers on Franklin County alfalfa; averaged 30 per sweep in one field. No adults found further north in Coshocton and Holmes County alfalfa. (Rose). MISSOURI - Collected for first time in Boone County. (Puttler). WISCONSIN - Nymphs ranged second through fourth instars; spittle masses up to 1 inch in diameter. Highest in southwest counties with up to 34 per 10 stems. In parts of Dane County, infestations on wide variety of plants other than alfalfa. (Wis. Ins. Sur.). MINNESOTA - General in Houston County alfalfa. Light in south-central, east-central, and central districts. In Chisago County field, 11 of 20 stems infested with average of 1.5 nymphs per spittle mass. (Minn. Ins. Rpt.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Very light (5 per 100 sweeps) in alfalfa of Cochise and Graham Counties. This is much below normal. Counts higher in Maricopa and Yuma Counties; average 20 per 100 sweeps. (Ariz. Coop. Sur.).

BROWN WHEAT MITE (Petrobia latens) - NEW MEXICO - Heavy in alfalfa in Bernalillo and Sandoval Counties. Populations heavier in fields where water scarce. (Heninger).

SOYBEANS

BEAN LEAF BEETLE (Cerotoma trifurcata) - DELAWARE - First adults of season on young soybeans in western Sussex County. (Burbutis). ILLINOIS - Holes in leaves of newly emerged soybeans not severe. (Moore, Kuhlman). MINNESOTA - On soybeans in Carver County. Damage light in most fields. Higher on marginal rows in fields adjacent to alfalfa. (Minn. Ins. Rpt.).

BLACK CUTWORM (Agrotis ipsilon) - SOUTH DAKOTA - Caused some damage in 50-acre soybean field adjacent to corn in Lake County. (Berndt).

GREEN STINK BUG (Acrosternum hilare) - MISSISSIPPI - Light to moderate on 4 to 6-inch high soybeans in Yazoo County. Highest count, one stink bug per 20 feet of row. (Dinkins).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - MISSISSIPPI - Increasing in 6-inch tall soybeans. Approximately one per 10 feet of row in Yazoo County. No damage apparent. (Dinkins).

PEANUTS

BURROWING STINK BUGS - ALABAMA - Large numbers of Pangaeus bilineatus and probably few Tominotus communis observed along field borders and under trash and litter adjoining large peanut field on farm in Geneva County; no damage reported. Heavy population could develop in field similar to 1966 if climatic conditions become favorable later. (Bond).

TOBACCO THRIPS (Frankliniella fusca) - ALABAMA - This species and other thrips medium to heavy and causing much damage to untreated peanuts in Pike, Houston, Covington, Barbour, and Henry Counties. (Carter et al.).

A WEEVIL (Artipus floridanus) - FLORIDA - Adults completely defoliated over 0.5 acre of peanuts; still numerous in peanuts bordering heavily damaged spot at Chiefland, Gilchrist County, June 5. Det. by L. C. Kuitert. (Yelvington).

COTTON

BOLL WEEVIL (Anthonomus grandis) - SOUTH CAROLINA - Emergence continues very light in Florence area. Very few weevils seen in fields. (Taft et al., June 7). TENNESSEE - Overwintered weevils present in large numbers over regularly infested area. Emergence from hibernation should be complete by July 1. Some bud injury noted. (Locke). GEORGIA - Continued heavy emergence in south area. (Womack). ALABAMA - Emergence of overwintered weevils in cotton very high in southern and central areas. Egg laying in squares of older cotton high. Numerous fully fruiting fields with 2-3 nearly grown squares per stalk with 25-80 percent of squares punctured. Over half of affected squares contain eggs and larvae. Weevils heavy and widespread in Washington County; percent punctured squares 50-80 in older cotton. One field in Sumter County shows 95-100 percent of young squares punctured. Several fields of older cotton in Lee, Macon, and Tallapoosa Counties with 8-75 percent infestation. Live weevils heavy in squares. First "hatchout" of first-generation weevils will probably begin about June 15 and become heavy by June 25 in these counties. Weevils emerging in northern area and range none to heavy in presquare cotton. Numbers extremely high per acre on many farms in Lawrence, Madison, and Colbert Counties; expected to increase in next 15 days. Weevils present in all northern counties except Cullman. (McQueen et al.). MISSISSIPPI - Overwintered weevils found in 14 of 36 fields (mostly

presquaring) in delta counties. Ranged 50-450 (average 60.5) per acre for all fields checked. Percent punctured squares 71 in one field squaring well. (Pfrimmer et al.). Overwintering weevils moving into older cotton in Yazoo County. Approximately one per 1,000 feet of row found in cotton with very small squares. (Dinkins). TEXAS - Weevils found in 26 of 33 untreated fields and in 3 of 14 treated fields in Waco area. Averaged 140 (maximum 875) per acre in untreated fields and 60 (maximum 188) in treated fields. Overall average of 105 per acre compares with 9 per acre at same time in 1966. In field with sufficient squares to make counts, percent punctured averaged 4.9 (range 3.8-6) in 2 treated fields and averaged 24.4 (range 9.2-37) in 3 treated fields. One weevil collected on flight screens. (Cowan et al.).

FLEA BEETLES - TENNESSEE - Damage evident throughout western area. Some infestations justify controls. (Locke).

BOLLWORMS (*Heliothis* spp.) - SOUTH CAROLINA - Total of 4 *H. zea* moths taken in light trap at Florence. (Taft et al., June 7). GEORGIA - Eggs and some small larvae in terminals in south area (Womack); increasing in light trap, but still lower than normal in Spalding County (Beckham). MISSISSIPPI - *Heliothis* spp. eggs found in 3 fields in delta counties. (Pfrimmer et al.). TEXAS - *H. zea* larvae very light in one of 14 treated fields and in 4 of 33 untreated fields in Waco area. Eggs found in 5 of 14 treated fields and in 6 of 33 untreated fields. (Cowan et al.). NEW MEXICO - Heavy flights of *H. zea* moths collected in light trap in Las Cruces area. (Durkin). ARIZONA - *H. zea* eggs and larvae light to moderate in cotton in Yuma, Maricopa, and areas of Pinal County. (Ariz. Coop. Sur.).

YELLOW-STRIPED ARMYWORM (*Prodenia ornithogalli*) - ALABAMA - Few larvae feeding on young cotton plants in isolated fields in Madison and Lawrence Counties. (Halla et al.).

BEET ARMYWORM (*Spodoptera exigua*) - ARIZONA - Scattered but very light populations feeding on new terminal leaves in Yuma and Maricopa Counties. (Ariz. Coop. Sur.).

APHIDS - MISSISSIPPI - Light in one and medium in one of 38 fields checked in delta counties. (Pfrimmer et al.). TEXAS - Light in 24 of 36 fields in Waco area. (Cowan et al.). NEW MEXICO - *Aphis craccivora* building up on cotton in northern Dona Ana County fields. (Nelson). Generally light on cotton in Chaves County. (Mathews). CALIFORNIA - *Aphis gossypii* and *Myzus persicae* occurring on cotton seedlings in Kerman, Fresno County. (Cal. Coop. Rpt.).

PLANT BUGS (*Lygus* spp.) - MISSISSIPPI - *L. lineolaris* light on older cotton in Yazoo County. Averaged one per 100 feet of row found in cotton just beginning to form squares. (Dinkins). ARIZONA - *Lygus* spp. adults ranged 2-8 per 100 sweeps in Yuma County cotton. Smaller numbers found in Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

FLEAHOPPERS - ARIZONA - Light infestations of *Psallus seriatus* (6 per 100 sweeps) general through Pinal, Maricopa, and Graham Counties. (Ariz. Coop. Sur.). MISSISSIPPI - *P. seriatus* light in older cotton in Yazoo County; buildup expected next 7 days. *Spanogonicus albofasciatus* very light on older cotton in same area. (Dinkins).

THRIPS - TENNESSEE - Continue to cause much damage to young cotton in western area. Infestations range light to heavy. (Locke). GEORGIA - Damage light to moderate to younger cotton in southern area (Womack); damage moderate to seedling cotton in Spalding County (Beckham). MISSISSIPPI - Of 38 fields checked in delta counties, injury heavy in 2, medium in 6, light in 10, and none evident in 20 fields. Thrips mostly *Frankliniella fusca*. (Pfrimmer et al.). ARKANSAS - Increased past few days in Mississippi County. Very low in cotton in areas of heavy rainfall. One report of up to 20 (mostly larvae) per plant received. (Ark. Ins. Sur.). MISSOURI - High numbers damaging cotton in southeast area; counts as high as 15 per small plant. (Munson). TEXAS - Heavy in one, medium in 3, and light

in 23 of 27 untreated fields in Waco area. Light in 7 of 9 treated fields. (Cowan et al.).

TOBACCO

SLUGS - WISCONSIN - Ranged 25-40 per rod in Dane County tobacco seed bed. Metaldehyde bait killed 25 percent first day. (Wis. Ins. Sur.).

SUGARBEETS

BEET WEBWORM (Loxostege sticticalis) - COLORADO - Moths continue numerous throughout Arkansas Valley including Baca County. Few larvae found in Otero and Pueblo Counties; 0-2 per 20 plants. No economic infestations found. Moths observed in trace numbers in sugarbeet fields in Weld County. (Schweissing, Jenkins).

SUGAR-BEET WIREWORM (Limonius californicus) - IDAHO - Destroyed sugarbeet field and reduced following corn stand by 80 percent at Sand Hollow, Canyon County. Field treated in 1966. (Linford). Seed in potato field at Blackfoot, Bingham County, generally infested. Field treated prior to planting. (Weston). WASHINGTON - Larvae ranged 1-10 per sugarbeet plant at Toppenish, Yakima County; caused severe loss of plants on about 35 acres. (Onsanger).

SUGAR-BEET ROOT MAGGOT (Tetanops myopaeformis) - COLORADO - Maggots found on sugarbeets in areas where adults emerged early southeast of Berthoud in Larimer County and northeast of Greeley in Weld County. Trace numbers of beets show evidence of injury. (Marsh et al.).

MISCELLANEOUS FIELD CROPS

BLACK VINE WEEVIL (Brachyrhinus sulcatus) - WASHINGTON - Adults active. Larvae killing hop crowns in small areas of 2 hop yards at Grandview, Yakima County. About 90 percent adults; few pupae and larvae remain. (Cone, June 2).

PACIFIC COAST WIREWORM (Limonius canus) - WASHINGTON - Damage light to heavy on new planting of mint, especially new sprouts, at Zillah, Yakima County. (Onsanger).

HOP APHID (Phorodon humuli) - OREGON - Abundant in hops in most fields in the Willamette Valley; 50-60 percent of leaves infested with 10-15 aphids per infested leaf. (Morrison).

A MINT APHID (Ovatus crataegius) - OREGON - Appearing in peppermint fields in the Willamette Valley. Pupae appear light at this time. (Morrison).

LYGUS BUGS (Lygus spp.) - ARIZONA - Light increase observed in safflower fields of Yuma, Pinal, and Maricopa Counties; however, populations continue very light for this time of year. (Ariz. Coop. Sur.).

POTATOES, TOMATOES, PEPPERS

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - NEW YORK - Adults increasing with more potatoes emerging in Suffolk County. Very heavy on tomato field in Orleans County. (N. Y. Wkly. Rpt., June 5). NEW JERSEY - Activity increased due to warmer weather. (Ins.-Dis. Newsltr.). DELAWARE - Adults and eggs on tomatoes throughout State. (Burbutis). MARYLAND - Eggs and larvae heavy on large tomato planting in Dorchester County. (U. Md., Ent. Dept.). VIRGINIA - All larval stages present on Eastern Shore; some entered soil to pupate. Development about 10 days later than normal. (Hofmaster). KANSAS - All stages heavy on Dickinson County potatoes. (Brooks).

FLEA BEETLES - COLORADO - Ranged 0-20 per 100 sweeps of potatoes in Otero and Bent Counties; 0-12 per 100 sweeps in Weld County. (Schweissing, Urano). VERMONT - Prevalent in most vegetable gardens; damage heaviest on newly set tomatoes and crucifers. (MacCollom, June 5). NEW JERSEY - Activity increased with advent of warm weather. (Ins.-Dis. Newsltr.). VIRGINIA - Adults troublesome on tomatoes on Eastern Shore. (Hofmaster). MARYLAND - Epitrix hirtipennis adults averaged 3 per plant on newly set tomatoes near Lanham, Prince Georges County. (U. Md., Ent. Dept.). RHODE ISLAND - E. cucumeris less numerous on tomato at Peace Dale than on radish at Kingston, Washington County. (Mathewson, Colodney, June 1).

PACIFIC COAST WIREWORM (Limonius canus) - WASHINGTON - Caused light damage to potato seed pieces on 28 acres at Warden, Grant County. (Onsanger). IDAHO - Infestation general in 20-acre potato field at Caldwell, Canyon County; up to 4 larvae per hill May 11. (Homan, Portman).

POTATO TUBERWORM (Phthorimaea operculella) - VIRGINIA - Large number of larvae observed mining potato foliage on Eastern Shore. This undoubtedly reflection of extremely high 1966 fall population and survival of some overwintering larvae in discarded and volunteer potatoes. (Hofmaster). ALABAMA - Larval damage in potatoes resulting in low grades at sheds and causing much loss to growers in Baldwin County. (Turner et al.).

EUROPEAN CORN BORER (Ostrinia nubilalis) - DELAWARE - Egg masses on potatoes in Kent County. (Burbutis).

GREEN PEACH APHID (Myzus persicae) - CALIFORNIA - Medium on seedling tomato plantings in Stockton, San Joaquin County. (Cal. Coop. Rpt.).

POTATO APHID (Macrosiphum euphorbiae) - DELAWARE - Increased on tomatoes in many areas. (Burbutis). OHIO - Averaged less than one per leaf on young tomatoes and potatoes in truck crop plantings in Washington County. (Rose).

CABBAGE MAGGOT (Hylemya brassicae) - NEW YORK - Eggs hatched in Orleans County. (N. Y. Wkly. Rpt., June 5).

BEANS AND PEAS

PEA APHID (Acyrtosiphon pisum) - DELAWARE - Populations remain low on peas in most areas; highest numbers present in few fields in western Kent and New Castle Counties. (Burbutis). WISCONSIN - Population in pea fields in Dane, Iowa, Columbia, and Dodge Counties averaged 2 per 10 sweeps. (Wis. Ins. Sur.).

BEAN LEAF BEETLE (Cerotoma trifurcata) - MARYLAND - Adults and foliage damage increasing on snap and young lima beans on Eastern Shore. (U. Md., Ent. Dept.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - GEORGIA - Light on lima beans in Spalding County. (Dupree). COLORADO - Low numbers of adults found on pasture land north of Fort Collins, Larimer County. (Wellso).

GREEN CLOVERWORM (Plathypena scabra) - MICHIGAN - First adults of season in black-light trap in Livingston County. (Janes, June 5).

SEED-CORN MAGGOT (Hylemya platura) - VIRGINIA - Larvae infesting lima beans at Blacksburg, Montgomery County. (Isakson).

COLE CROPS

CABBAGE MAGGOT (Hylemya brassicae) - WISCONSIN - Some larval damage to cabbage seedlings in Columbia County. (Wis. Ins. Sur.). NEW YORK - First flies and eggs of season in Ontario County. (N. Y. Wkly. Rpt., June 5). RHODE ISLAND - Eggs on radish in Kingston, Washington County. (Mathewson, Colodney, June 1).

RED TURNIP BEETLE (Entomoscelis americana) - MINNESOTA - Reported from Stearns and Sibley Counties and in Minneapolis and St. Paul area. (Minn. Ins. Rpt.).

CUCURBITS

STRIPED CUCUMBER BEETLE (Acalymma vittatum) - COLORADO - Low (1-2 per 50 plants) on cantaloup in all fields checked in Pueblo, Otero, Crowley, Bent, and Prowers Counties. (Schweissing). OHIO - Some damage to cucumbers in Washington County. (Racer, June 1). MARYLAND - First adults of season found June 6 on young cucumbers in Dorchester County. (U. Md., Ent. Dept.). DELAWARE - First adults of season in blacklight trap June 1 in Sussex County. (Burbutis).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - GEORGIA - Feeding on squash in Spalding County. (Dupree).

A FLEA BEETLE (Phyllotreta cruciferae) - DELAWARE - Adults averaged 2 per plant on melons in New Castle and Sussex Counties; injury noticeable. (Evans).

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Controls required on cantaloups in Wellton area of Yuma County. (Ariz. Coop. Sur.).

SQUASH BUG (Anasa tristis) - OKLAHOMA - Ranged 5-6 per plant on squash in Washita County. (Okla. Coop. Sur.).

LEAFHOPPERS (Empoasca spp.) - ARIZONA - Heavy (120 per 100 sweeps) on cantaloups in Wellton area, Yuma County. Some controls applied. (Ariz. Coop. Sur.).

GENERAL VEGETABLES

ASPARAGUS BEETLES (Crioceris spp.) - COLORADO - First C. asparagi adults of season observed in low numbers on asparagus at Fort Collins, Larimer County. (Wellso). WISCONSIN - C. asparagi problem on asparagus in several areas. (Wis. Ins. Sur.). DELAWARE - C. duodecimpunctata adults abundant on asparagus spears with injury noticeable in several areas of State. (Burbutis).

BLACK CUTWORM (Agrotis ipsilon) - WISCONSIN - Severely damaged vegetable crops in central counties. (Wis. Ins. Sur.).

CELERY LOOPER (Anagrapha falcifera) - MICHIGAN - Greater than normal numbers in blacklight traps. (Newman).

THRIPS - NEW MEXICO - Some controls underway on late onions in Dona Ana County. (Campbell). COLORADO - Small numbers of Thrips tabaci appearing on seeded onions in Arkansas Valley area; 0-5 per plant. Populations on transplants increasing rapidly, reaching highs of 30 per plant. Damage occurring to heavily infested plants. (Schweissing).

ONION MAGGOT (Hylemya antiqua) - NEW YORK - In mature onion bulbs June 1 in Orange County. (N. Y. Wkly. Rpt., June 5). COLORADO - Larvae active in onion fields north of Greeley, Weld County. (Urano).

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (Carpocapsa pomonella) - UTAH - Largest flight night of June 4-5; 15 in blacklight trap at Logan, Cache County, and many in attractant traps at Payson, Utah County. (Davis, Knowlton). COLORADO - Nearing end of first-brood flight; fewer moths in attractant traps. (Bulla). MISSOURI - No entries this period. (Wkly. Rpt. Fr. Grs.). INDIANA - Adult emergence continues at Vincennes; 57 moths in light trap comparable to 53 previous week. Small larvae reached seeds. (Dolphin, June 5). OHIO - Numerous adults emerged June 1-6 in Wayne County. (Forsythe). MARYLAND - Moth emergence continues but no egg hatch at Hancock, Washington County. (U. Md., Ent. Dept.). NEW YORK - First moths of season in Monroe County and at Stone Ridge, Montgomery County, June 2, but leaf-miner cage at Stone Ridge caught 3 end of May. (N. Y. Wkly. Rpt., June 5).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - NEW YORK - Numerous adults appeared May 29 in bait pails at Claverack Columbia County; fewer at Lagrangeville, Dutchess County. (N. Y. Wkly. Rpt., June 5). INDIANA - Adults scarce at Vincennes. Many prepupae of first summer brood left infested terminal twigs and fruit. (Dolphin, June 5).

CHERRY FRUITWORM (Grapholitha packardii) - NEW JERSEY - First entries observed. (Ins-Dis. Newsltr.).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - NEW YORK - Adults still flying near Lake Ontario shore; significant number of males in sex attractant traps. Some freshly laid egg masses found in this orchard where infestation moderate to heavy in 1966. South of State Route 104 very few males trapped; no egg masses. (N. Y. Wkly. Rpt., June 5). INDIANA - Emergence of first summer-brood adults increased at Vincennes: 3-day capture of 617 males by 20 virgin-female traps. (Dolphin, June 5).

PEACH TREE BORER (Sanninoidea exitiosa) - OKLAHOMA - Adults emerging from peach trees at Perkins, Payne County. (Okla. Coop. Sur.).

A CHERRY LEAF MINER (Nepticula slingerlandella) - MICHIGAN - Adult emergence peaked at Lawrence, Van Buren County; eggs up to 221 per 100-leaf samples. No activity in Oceana County. (Wooley).

LESSER PEACH TREE BORER (Synanthedon pictipes) - INDIANA - Male captures at Vincennes orchard declined from 78 to 69. (Dolphin, June 5).

ROSY APPLE APHID (Dysaphis plantaginea) - UTAH - Unusually numerous in apple orchards at Payson, Utah County. (Davis, Knowlton). COLORADO - High on apples in Delta, Garfield, Mesa, and Montrose Counties due to prolonged cool weather and rains; controls applied at first cover. (Bulla). INDIANA - Numerous, especially on north side of trees, at Vincennes. Nymphal and adult feeding curled leaves; small, distorted fruit evident in many orchards. (Dolphin, June 5). OHIO - Conditions favorable for buildup on unsprayed apple trees; at damaging levels in unsprayed sections of an experimental Fairfield County orchard. Moved from leaves to apple fruit May 27; since then some apples malformed. Ratio of predators to aphids low. (Holdsworth). In Wayne County, some curled leaves contained 100 or more aphids per leaf; alates appearing. (Forsythe). MARYLAND - Deformed some apples in unsprayed Talbot and Washington County orchards. (U. Md., Ent. Dept.).

GREEN PEACH APHID (Myzus persicae) - MARYLAND - Heavy in peach orchard near Smithburg, Washington County. (U. Md., Ent. Dept.). COLORADO - Increasing on Mesa County peaches without early controls, 10-20 colonies per tree. Heavy in many unsprayed peach orchards. (Bulla, Sisson). WASHINGTON - Caged peach trees produced 100-200 alates per tree a day May 18-26, at Parker, Yakima County. (Powell).

ARMORED SCALES - FLORIDA - Pseudaulacaspis pentagona still serious on unsprayed peaches at Gainesville, Alachua County. Mostly eggs May 26, but as of June 8, principally first sedentary stage. This is second generation this year. (Fla. Coop. Sur.). INDIANA - Aspidiotus perniciosus crawlers left mother scales and attached to apples, causing characteristic red-spot blemish; percentage affected seems small at Vincennes. (Dolphin, June 5). WISCONSIN - Lepidosaphes ulmi egg hatch accelerated and apparently complete; 80 percent of crawlers exposed on tree branches in south area. (Wis. Ins. Sur.). NORTH DAKOTA - Chionaspis furfura heavy on apple at Lakota, Nelson County; controls applied. (McBride).

PLUM CURCULIO (Conotrachelus nenuphar) - INDIANA - Some larvae in peaches at Vincennes up to half grown. Many larvae died while feeding, but left unmarketable fruit. Some apples with adult feeding and oviposition scars falling as part of June drop. (Dolphin, June 5). NEW YORK - Laid eggs on sweet cherries May 31 in Ulster County. (N. Y. Wkly. Rpt.). CONNECTICUT - Not easily found, but weather ideal. Few feeding and egg laying scars at New Haven, Storrs, Bantam, and Woodstock. (Savos, June 7). RHODE ISLAND - First 2 adults of season on apple in Kingston, Washington County. (Mathewson, May 28).

APPLE CURCULIO (Tachypterellus quadrigibbus) - CONNECTICUT - Six adults collected on apple blossom May 31; 1 adult on June 6. (Savos).

EUROPEAN APPLE SAWFLY (Hoplocampa testudinea) - CONNECTICUT - Hatched, larvae tunneling in young fruit apparent at New Haven and Storrs; not as abundant as in past years. (Savos, June 7). NEW YORK - Adults active May 29 in Ulster County; larvae damaged unsprayed apples in Ulster Park area June 2. (N. Y. Wkly. Rpt.).

A CHERRY FRUIT FLY (Rhagoletis cingulata indifferens) - OREGON - Emerging in cherry orchards in Hood River County June 2. (Peifer).

SPIDER MITES - MAINE - Panonychus ulmi hatched May 24 at Monmouth, Kennebec County. (Boulanger, June 2). VERMONT - P. ulmi eggs hatched rapidly. (MacCollom, June 5). CONNECTICUT - P. ulmi expected to increase rapidly. (Savos, June 7). NEW JERSEY - Eggs, larvae, and adults of P. ulmi easily found in poorly sprayed blocks. Tetranychus spp. very light; feeding on fruit tree foliage near Elm, Camden County. (Ins.-Dis. Newsltr.). OHIO - First P. ulmi summer eggs of season in Wayne County June 5. Egg counts June 6 on apple leaves untreated for this pest, yielded 0.5-2.5 per leaf. (Forsythe). Summer eggs June 7, few on Licking County apple trees on a regular spray program. (Rose). INDIANA - P. ulmi and Tetranychus urticae lower than previous week in unsprayed Vincennes check orchard; sample counts between 0.25-0.75 mobile form per leaf. (Dolphin, June 5). MICHIGAN - P. ulmi continues egg laying in unsprayed or poorly sprayed orchards. (Woolley). MISSOURI - P. ulmi damaged foliage on unsprayed plum trees in southeast area. Few noted in an orchard near Rocheport. (Wkly. Rpt. Fr. Grs.).

FALL CANKERWORM (Alsophila pometaria) - CALIFORNIA - Larvae heavy on English walnut trees at Fairfield, Solano County. (Cal. Coop. Rpt.).

WALNUT CATERPILLAR (Datana integerrima) - NORTH DAKOTA - Abundance moderate on walnut at Fargo, Cass County; controls applied. (McBride).

PECAN BUD MOTH (Gretchena bolliana) - VIRGINIA - Larvae feeding in tips of pecan trees at location in Rocky Mountain, Franklin County. (Isakson, Tucker, June 2).

A FALSE POWDER-POST BEETLE (Xylobiops basilaris) - ALABAMA - Adults heavy and widespread throughout Mobile County, damaged young pecan trees injured by sudden freeze early November 1966 and by drought early this spring. Heavy numbers damaged weak and dying limbs; also damaged and killed nearby healthy young trees. (Deakle).

A LONG-HORNED BEETLE (Elaphidionoides parallelus) - MICHIGAN - Adults emerged from Carpathian walnut trees. (Newman, Wallner).

CITRUS

Citrus Insect Situation in Florida - End of May - CITRUS RUST MITE (*Phyllocoptruta oleivora*) on leaves infested 53 percent of groves (norm 36 percent); 44 percent economic (norm 19 percent). Population decreased but still near high range and at highest record for May. Little change expected until summer increase starts in late June. Highest districts central, south, and north. TEXAS CITRUS MITE (*Eutetranychus banksi*) infested 76 percent of groves (norm 54 percent); 56 percent economic (norm 34 percent). New record high level for May. Further expected increase through June will keep population well into high range. All districts high. CITRUS RED MITE (*Panonychus citri*) infested 58 percent of groves (norm 57 percent); 26 percent economic (norm 43 percent). Population will increase into high range late in June but is not expected to exceed level for period. Highest district east. GLOVER SCALE (*Lepidosaphes gloverii*) infested 88 percent of groves; 32 percent economic. Population above normal and in high range. Further increase expected. Highest districts east, south, central, and west. PURPLE SCALE (*L. beckii*) infested 84 percent of groves; 9 percent economic. Population near normal and in moderate range. Little change expected. Very few infestations will be important. Highest district central. BLACK SCALE (*Saissetia oleae*) infested 43 percent of groves; 22 percent economic. Rapid increase underway and population will enter high range by mid-June. A peak near average level expected about mid-July. Highest districts east and west. CHAFF SCALE (*Parlatoria pergandii*) infested 72 percent of groves; 8 percent economic. Population below average and in moderate range. Slight increase expected through June. Highest districts central and east. An ARMORED SCALE (*Unaspis citri*) is present in 11 percent of survey groves and is spreading and increasing. YELLOW SCALE (*Aonidiella cintrina*) infested 69 percent of groves; 2 percent economic. Will occur only as light to moderate infestations and be less important than in past 2 years. Highest district central. WHITEFLIES infested 62 percent of groves; 22 percent economic. Larval forms will be in above normal numbers during June and population may enter high range. MEALYBUGS infested 50 percent of groves; 8 percent economic. Population will increase rapidly and enter high range in late June. Infestations will be about as numerous as in past 2 years with heavy infestations expected in 5 to 10 percent of groves. (W. A. Simanton, (Citrus Expt. Sta., Lake Alfred)).

CITRUS THRIPS (*Scirtothrips citri*) - ARIZONA - Controls necessary to reduce damaging numbers on citrus in Tacna area of Yuma County. (Ariz. Coop. Sur.).

PRIVET MITE (*Brevipalpus obovatus*) - FLORIDA - Adults collected on sweet orange at Auburndale, Polk County. (Knorr, May 24). First Florida Department of Plant Industry record on sweet orange. (Denmark).

SMALL FRUITS

BLACK-HEADED FIREWORM (*Rhopobota naevana*) - MASSACHUSETTS - Larvae just appeared on cranberry bogs, 2 weeks later than usual because of cold, wet spring. (Tomlinson, June 2). NEW JERSEY - Moderate on most-advanced cranberry bogs. (Ins.-Dis. Newsltr.).

STRAWBERRY LEAF ROLLER (*Ancylis comptana fragariae*) - KANSAS - Small larvae moderate on Dickinson County strawberries. (Brooks).

OMNIVOROUS LEAF TIER (*Cnephasia longana*) - WASHINGTON - Larvae on strawberry foliage at Vancouver, Clark County. (Shanks, June 5).

A LEAF ROLLER MOTH (*Sparganothis sulfurana*) - MASSACHUSETTS - Larvae just appeared on cranberry bogs, 2 weeks later than usual because of cold, wet spring. (Tomlinson, June 2).

A CRANBERRY BLOSSOMWORM (*Epiglaea apiata*) - MASSACHUSETTS - Larvae just appeared on cranberry bogs, 2 weeks later than usual because of cold, wet spring. (Tomlinson, June 2).

CRANBERRY FRUITWORM (Acrobasis vaccinii) - NEW JERSEY - First eggs on blueberry June 1; increased ten fold June 4-6, from 0.33 to 3.5 per 100 fruit clusters. First entries also noted. (Ins.-Dis. Newsltr.).

STRAWBERRY WEEVIL (Anthonomus signatus) - MAINE - Damaged early varieties at West Gardiner and Monmouth, Kennebec County. (Boulanger, June 2).

EASTERN RASPBERRY FRUITWORM (Byturus rubi) - RHODE ISLAND - Adults on raspberry at Kingston and Peace Dale, Washington County. (Mathewson, Colodney, June 1).

MEADOW SPITTLEBUG (Philaenus spumarius) - MAINE - Light June 1 on strawberries at West Gardiner, Kennebec County. (Boulanger).

TARNISHED PLANT BUG (Lygus lineolaris) - MAINE - Light on strawberries at Union, Knox County, May 22. (Boulanger).

SPIDER MITES (Tetranychus spp.)-- NEW JERSEY - Increasing on strawberries due to warm weather. (Ins.-Dis. Newsltr.).

ORNAMENTALS

LEAF ROLLER MOTHS - NEVADA - Argyrotaenia cockerellana infestations and damage on ornamental juniper increased in southwest Reno, Washoe County. All larval stages few pupae, present; adults emerged in late May 1966. (Bechtel). Choristoneura zapulata infesting various shrubs in same area. (Lauderdale). NORTH DAKOTA - C. rosaceana larval damage light on rose at Fargo, Cass County; controls applied. (McBride).

BAGWORM (Thyridopteryx ephemeraeformis) - MARYLAND - First larvae of season June 6 on arborviate near Kingsville, Baltimore County. (U. Md., Ent. Dept.). INDIANA - Eggs hatched June 6 in Indianapolis area of Marion County. (Clark).

A COTONEASTER WEBWORM (Cremona cotoneastri) - NORTH DAKOTA - Larval damage moderate to heavy on cotoneaster at Jamestown, Stutsman County; controls applied. (McBride).

OYSTERSHELL SCALE (Lepidosaphes ulmi) - OHIO - Crawlers or nymphs active in Licking and Franklin Counties; crawlers numerous on lilac. (Walker).

SPIDER MITES - CALIFORNIA - Eotetranychus lewisi heavy on poinsettia plants at San Bernardino, San Bernardino County; unusually early for these infestations. (Cal. Coop. Rpt.). OKLAHOMA - Tetranychus sp. heavy and damaged Pfitzer juniper in Osage County. (Okla. Coop. Sur.).

FOREST AND SHADE TREES

TENT CATERPILLARS (Malacosma spp.) - MAINE - M. americanum egg masses began to hatch May 21 in Hancock County. (Boulanger). RHODE ISLAND - M. americanum tents conspicuous. (Mathewson, King, June 2). OHIO - M. americanum pupating; damage to wild cherry and apple over for season. Adults at blacklight traps central and southern areas. Few cocoons in webbing on heavily infested host trees, parasitism heavy, and relatively few adults in blacklight traps in Washington County suggest larvae may be much lighter in 1968 than in 1966 and 1967 in parts of southeastern area. (Rose). WISCONSIN - M. americanum infested cherry and apple in southern counties. Many larvae full grown and migrating. (Wis. Ins. Sur.). MINNESOTA - M. disstria spotty at Virginia, Hibbing and Eveleth in St. Louis County; some chemical control applied in Virginia. (Minn. Ins. Rpt.). OREGON - M. pluviale pupating in several areas of Multnomah and Washington Counties. Numbers spotty this year with numerous tents noted in Multnomah, Washington, and Yamhill Counties. (Larson).

CANKERWORMS - NEW JERSEY - Heavy throughout State. (Ins.-Dis. Newsltr.). MICHIGAN - Paleacrita vernata larvae common on ornamental trees in several mid-State areas. (Hanes, Guyer). WISCONSIN - Alsophila pometaria larval feeding damage severe at some sites in western Dane and Sauk Counties. Lush growth of elms masked injury somewhat. (Wis. Ins. Sur.). MINNESOTA - P. vernata moderate at Minneapolis and Saint Paul and suburbs. Individual controls on some ornamentals, but not serious enough for area or municipal control. Almost full grown in Twin City area; feeding should be complete by end of next period. (Minn. Ins. Rpt.).

TORTRICID MOTHS - CALIFORNIA - Archips argyrospilus larvae heavy on oak trees and Oregon-grape plants in Loomis, Placer County. (Cal. Coop. Rpt.). MINNESOTA - Choristoneura pinus second instars fed in staminate flowers for past week or more. (Minn. Ins. Rpt.). WISCONSIN - C. pinus second instars just becoming active in northwest area June 2 when all jack pine pollen had been shed. (Wis. Ins. Sur.).

OLETHREUTID MOTHS (Rhyacionia spp.) - CONNECTICUT - R. buoliana in pupal stage. (Savos, June 7). INDIANA - R. buoliana adult emergence underway in Marion County. (Clark). KANSAS - Second-generation adults of R. frustrana emerging in Riley and Labette Counties. Up to 80 percent of tips very severely damaged. (Thompson).

FALL WEBWORM (Hyphantria cunea) - NEW MEXICO - Heavy moth flights noted in light trap in Las Cruces area. (Durkin). ARKANSAS - Red-headed race appeared as far north as Crittenden and Craighead Counties. (Warren).

LARCH CASEBEARER (Coleophora laricella) - VERMONT - Common on European larch in Champlain Valley. (MacCollom, June 5).

A GELECHIID MOTH (Exoteleia sp.) - OHIO - Larvae mining this year's growing tips in Scotch pine plantings in east-central and northeastern areas. Very numerous in 10-acre Christmas tree planting in Stark County and in 50-acre planting in Trumbull County. (Campbell, June 2).

ELM LEAF BEETLE (Pyrrhalta luteola) - NEW JERSEY - Adults appearing on elms. (Ins.-Dis. Newsltr.). KANSAS - First-generation larvae still feeding in most areas. (Thompson). TEXAS - Moderate to heavy on elm trees throughout Glasscock County. (Werst). NEW MEXICO - Larval feeding heavy on Siberian elms in Belen and Valencia Counties. Adults heavy in Bernalillo and Sandoval Counties. (Heninger). NEVADA - Some first instars in southern Washoe County; some eggs laid. Development later than normal due to weather. (Coop. Rpt.).

WHITE-PINE WEEVIL (Pissodes strobi) - RHODE ISLAND - Adults easily found on white pine leaders in Kingston area, Washington County. (Mathewson, June 1).

A LEAF-MINING WEEVIL (Odontopus calceatus) - OHIO - Eggs through second instars on yellow-poplar foliage in Athens, Vinton, and Hocking Counties. Mines becoming visible; adult feeding damage especially noticeable on foliage of larger trees. (Donley, Burns, June 2).

NATIVE ELM BARK BEETLE (Hylurgopinus rufipes) - NORTH DAKOTA - Adults in window trap at Wishek, McIntosh County, for new county record. (Brandvik).

BALSAM TWIG APHID (Mindarus abietinus) - OHIO - Light but common on new growth of Scotch pine in one-acre Christmas tree planting and 10 acres of blue spruce in Lake County; light on 100-acre pine planting in Jefferson County. (Anderson, Campbell). RHODE ISLAND - Heavy in fir planting at Kingston, Washington. (Mathewson, June 2).

GALL APHIDS (Adelges spp.) - CONNECTICUT - A. abietis galls forming, young adults within; many eggs from stem mothers yet to hatch indicate long hatch period. (Savos, June 7). WISCONSIN - A. abietis egg laying ceased; nymphs within galls producing flocculence by June 8. A. cooleyi plentiful on Douglas-fir in Jefferson County. Eggs hatching in open but not shaded areas. (Wis. Ins. Sur.). OHIO - A. cooleyi heavy on 300 Douglas-fir trees about 5 feet high in Ashland County; some yellow discoloration of needles occurred. (Barth). Galls on blue spruce enlarging in Wayne County. (Campbell).

COTTONY MAPLE SCALE (Pulvinaria innumerabilis) - OHIO - First infestation of season on maple in Wayne County; severe on many trees. (Rings).

EUROPEAN ELM SCALE (Gossyparia spuria) - KANSAS - Heavy in Harvey County; crawlers moving. (Brooks).

PINE SPITTLEBUG (Aphrophora parallela) - DELAWARE - Abundant on loblolly and Virginia pines in Sussex County. (Burbutis).

EUROPEAN PINE SAWFLY (Neodiprion sertifer) - NEW YORK - Larvae damaged pine in Ithaca area. (N. Y. Wkly. Rpt., June 5). OHIO - Most economically damaging pine defoliator in State. Larvae very heavy in extensive roadside plantings of red pines in Ashland and Knox Counties; many trees 25-50 percent defoliated and some completely stripped of last year's needles. Smaller trees, 6-12 feet high most severely damaged. Larvae nearing pupation. (Rose). Trees 15-20 feet tall in 5 to 6-acre planting in Muskingum County, barren of old needles. Scotch pine as well as red pine in vicinity badly defoliated. (Donley, Burns). Pupating in southern area. (Lautz, Hanson).

BIRCH LEAF MINER (Fenusa pusilla) - RHODE ISLAND - Adults common on birch Statewide. (Mathewson, King, June 2). WISCONSIN - Mines appearing on Jefferson County birch. (Wis. Ins. Sur.).

ASH PLANT BUG (Neoborus amoenus) - MINNESOTA - Very heavy on 8 to 10-foot nursery trees at location near Hastings. Severe feeding shriveled leaves and caused leaf drop on some trees. (Minn. Ins. Rpt.).

SPRUCE SPIDER MITE (Oligonychus ununguis) - KANSAS - Severely discolored pines in Shawnee, Riley, and Labette Counties. (Thompson).

AN ERIOPHYID MITE (Nalepella tsugifoliae) - RHODE ISLAND - Adults common on hemlock needles at nursery in Peace Dale, Washington County. (Mathewson, Colodney, June 1).

Weather continued from page 500.

TEMPERATURE: Cool temperatures continued for the 2nd week from the Pacific coast to the western Great Plains. Across the South and from the central Great Plains to New England, afternoon temperatures climbed to the 80's or low 90's almost every day. Averages were below normal over the Deep South for the 4th week. It seemed especially hot and humid from the Great Lakes to New England where temperatures averaged warmer than in any week since last September. (Summary supplied by Environmental Data Service, ESSA).

MAN AND ANIMALS

MOSQUITOES - MAINE - Mainly woods-pool Aedes spp. very active in Orono area June 3-4. (Boulanger). VERMONT - Mosquitoes annoying over State. (MacCollom, June 5). MICHIGAN - Situation unchanged. (Dowdy). WISCONSIN - Numerous and biting in northern counties; few problem areas in central and in low areas near rivers and streams. Aedes sticticus principal species; few Aedes vexans and Culex restuans appearing. (Wis. Ins. Sur.). MINNESOTA - Aedes vexans hatch significant wherever run-off water accumulated; first significant hatch of season. Substantial increase expected week of June 19. Of 52 larval collections made week ending June 3, Aedes fitchii present in 11 and Culiseta inornata 20. Of 295 females in light traps: Aedes aberratus 72, A. excrucians 33, A. punctor 32, Culex restuans 19, Culiseta inornata 39. (Minn. Ins. Rpt.). UTAH - Troublesome in Delta-Abraham area of Millard County; active at Ideal Beach, Rich County. (Knowlton). NEVADA - Adults heavy in Fallon area, Churchill County; mostly Aedes dorsalis with some A. campestris. (Lauderdale). TEXAS - In Jefferson County, 3 flights of Culex salinarius occurred on Pleasure Island during May. Large flight of Psorophora confinnis occurred in Beaumont area. Light trap index well below last year. Landing rates in Beaumont high during latter part of the month. Culex salinarius occasionally heavy in Port Arthur area during month; averaged 800 per night for 4 days. Culex spp. present throughout county. Aedes sollicitans numerous only in southern part of county. Aedes vexans occurred in northern part of county. Psorophora ciliata locally common in northern Beaumont. P. confinnis common in midcounty and south Beaumont areas, but very numerous in west Beaumont area. Anopheles crucians occurred throughout Jefferson County. Anopheles quadrimaculatus found only in south Beaumont. Single Mansonia perturbans flight occurred in south Beaumont, one day later in Port Arthur. Uranotaenia sapphirina general in county. (Jefferson Co. Mosq. Cont. Comm.).

HORN FLY (Haematobia irritans) - MISSISSIPPI - Averaged 1,100-1,200 per animal on 125 head of cattle in Lowndes County. (Dinkins). OKLAHOMA - Ranged 800-1,000 per head on cows in Kay County; heavy in Mayes County. (Okla. Coop. Sur.). NORTH DAKOTA - Averaged 120 per animal on beef herd in Emmons County. (Brandvik). NEW JERSEY - Increasing rapidly throughout State. (Ins.-Dis. Newsltr.).

SCREW-WORM (Cochliomyia hominivorax) - Total of 3 cases reported in U. S. June 4-10 as follows: TEXAS - Pecos 1, Hidalgo 1, Crockett 1. Total of 82 cases reported in portion of Barrier Zone in Republic of Mexico May 28-June 3 as follows: Territorio sur de Baja California 19, Sonora 13, Chihuahua 4, Coahuila 3, Nuevo Leon 8, Tamaulipas 35. Total of 127 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U. S. Sterile flies released June 4-10: Texas, 17,158,000, Mexico 145,596,000. (Anim. Health Div.).

HORSE BOT FLY (Gasterophilus intestinalis) - OKLAHOMA - First adults of season active on horses in Payne and Muskogee Counties. (Okla. Coop. Sur.).

HOUSE FLY (Musca domestica) - NEW JERSEY - Increasing rapidly throughout State. Controls recommended in poultry houses. (Ins.-Dis. Newsltr.).

BLACK FLIES (Simulium spp.) - UTAH - Large numbers swarming about horses and annoying man and cattle in Beaver Dam and Collinston area, Box Elder County. (Knowlton).

TICKS - WISCONSIN - Unusually abundant this season in northern counties although there may be reduction in some far northern counties. Reported in Iowa, Columbia, and Dane Counties. (Wis. Ins. Sur.). OKLAHOMA - Amblyomma americanum comprised 98 percent of ticks on cattle checked in Muskogee and Cherokee Counties; 90 percent adults. Moderate on cattle in Choctaw County, increasing in Pontotoc County. (Okla. Coop. Sur.). MARYLAND - Dermacentor variabilis abundant in wooded areas in southern sections. Case of Rocky Mountain spotted fever reported in 2-year-old child in Prince Georges County. (U. Md., Ent. Dept.).

BENEFICIAL INSECTS

LADY BEETLES - NEVADA - Varied 3-5 per sweep in some alfalfa in Carson Valley, Douglas County. (Munk). ARIZONA - Several species very heavy in various crops in Graham County. (Ariz. Coop. Sur.). COLORADO - Hippodamia convergens numerous in Arkansas Valley; low in Larimer County, 6 per 100 sweeps. (Schweissing, Sower). NORTH DAKOTA - Lady beetle adults ranged 3-50 per 100 sweeps (averaged 12) on northeast area alfalfa. (Brandvik). IOWA - Abundant on Decatur County alfalfa. (Iowa Ins. Sur.). MISSOURI - H. convergens larvae and pupae averaged 80 per 10 sweeps in north-central area field of red clover. (Munson). MISSISSIPPI - H. convergens most prevalent predator in cotton. Approximately one beetle per 50 feet of row in some older fields. (Dinkins). VIRGINIA - Very large numbers of H. convergens adults observed on Eastern Shore in potato fields and on other cultivated crops. Noted feeding on Colorado potato beetle and European corn borer egg masses. (Hofmaster).

A MELYRID BEETLE (Collops vittatus) - COLORADO - Adults 12 per 100 sweeps in Larimer County. (Sower).

DAMSEL BUGS - IOWA - Abundant on Decatur County alfalfa. (Iowa Ins. Sur.).

LACEWINGS - IOWA - Abundant on Decatur County alfalfa. (Iowa Ins. Sur.).

AN ICHNEUMON WASP (Bathyplectes cucurlionis) - ILLINOIS - Infesting more than 4 percent of Hypera postica larvae in Bond County field. (Ill. Ins. Rpt.).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

GRASSHOPPERS - CALIFORNIA - Hatch late and uneven in southern part of State. Rangeland conditions good with abundance of native vegetation and moisture. Camnula pellucida nymphs at Warner area, San Diego County, and at Morongo and the Cahuilla Indian Reservation, Riverside County. Oedaleonotus enigma nymphs infesting about 1,000 acres in area infested last year in Fresno County, and about 5,000 acres in Panoche Valley, San Benito County, with little movement to croplands noted. (Cal. Coop. Rpt.). NEW MEXICO - Drought prevailed over most of State to end of May. Nymphs ranged up to 50 per square yard in area of approximately 12,000 acres in east-central Lea County. First instars heavy on rangeland in few small areas scattered over an estimated 1,000 acres in extreme northwestern McKinley County. (PPC). COLORADO - First instars heavy in few crop margins in Mesa County. (Sisson). OKLAHOMA - Ranged 5-20 per square yard on rangeland in west-central and southwest counties with higher numbers on about 7,000 acres in Washita County, and 15,000 acres in Roger Mills County. Counts of 5-20 per square yard in scattered rangeland areas interspersed with cropland in Caddo and Kiowa Counties. Ageneotettix deorum, Phliostroma quadrimaculatum, Melanoplus bivittatus, Aulocara elliotti, and Psoloessa delicatula dominant. Late hatch underway in some areas of Delaware, Mayes, and Pittsburg Counties. Counts ranged 10-15 per square yard in spots. M. bivittatus, M. differentialis, Boopedon nubilum, and Hesperotettix sp. dominant. (Okla. Coop. Sur.). KANSAS - Stops at roadsides and field borders in Butler and Cowley Counties showed 6-10 nymphs per square yard; nymphs up to 15 per 10 alfalfa sweeps in Chase, Butler, and Cowley Counties. Mostly Melanoplus spp. (Simpson). SOUTH DAKOTA - For May 30-June 5, hatch still light but more general. First and second instars mostly M. bivittatus appearing along roadsides and in alfalfa fields in more heavily infested areas of south-central and southeastern sections. Nymphs averaged up to 20 per square yard on Sanborn County alfalfa in sandy soil. May become extremely heavy in drought area, which includes much of south-central and southeastern areas. (Burge). In western section rain and cool weather held back hatch. Still low in Wasta area of Pennington County, most heavily infested area last summer. (Zimmerman). NORTH DAKOTA - Mostly first instars (some second instars) noneconomic in Dickey, Emmons, Burleigh, Morton, and Sioux Counties. Marginal and field counts ranged 0-4 per square yard (averaged less than 1). Species included M. bivittatus, M. sanguinipes, and few C. pellucida. (Coupe). First instars noneconomic, less than 1 per

square yard, in margins and fields in Stark, Hettinger, Adams, Grant, Bunn, Mercer, Oliver, Billings, and Golden Valley Counties. M. sanguinipes, M. packardii and M. bivittatus dominant. (Stoltenow). MINNESOTA - Few first and second instars in northwest and central districts. Eggs coagulated in west-central district and coagulated to early eye spot in southwest district. Few newly hatched nymphs expected next period: M. bivittatus and M. sanguinipes should be of minor importance in most areas. (Minn. Ins. Rpt.). WISCONSIN - A green meadow grasshopper matured in Dane County. Dendrotettix quercus eggs just hatched at a site in Marinette County June 7, week later than 2 years ago. (Wis. Ins. Sur.). MICHIGAN - Early instars in Kalkaska County most numerous of recent years. (Cook).

CARIBBEAN FRUIT FLY (Anastrepha suspensa) - FLORIDA - Three larvae collected from fruit of imbe, Garcinia livingstonei, at tropical garden in Coral Gables, Dade County, June 2. This is new host record. (Sherron).

CEREAL LEAF BEETLE (Oulema melanopus) - ILLINOIS - Larva swept from oats at Oakwood, Vermilion County, 25 miles southwest of 1966 finds. (Lanier). INDIANA - Third instars on wheat and early oats at New Carlisle, St. Joseph County. Adults moving from wheat to oats. Adults moderate to heavy on corn adjacent to wheat; averaged 2 eggs per corn seedling in research area. (Shade, June 2). Larvae in oat field at Bellmore, Parke County. New county records: Ripley and Bartholomew. (Clark). MICHIGAN - Larval feeding not generally noticeable in mid-State counties. Mostly first instars, very few second instars June 5. Of 4 southern counties, Jackson had most adult feeding holes, eggs, and larvae on oats June 2, but sprays not required yet. (Dowdy).

CITRUS BLACKFLY (Aleurocanthus woglumi) - MEXICO - Biological Control Zone - Total of 2,500 trees inspected on 2 properties in Municipios Hidalgo and Padilla, Tamaulipas. Both properties lightly infested. Chemical Control Zone - Inspections made of 85,150 trees on 1,345 properties in 9 municipios of Tamaulipas and Nuevo Leon including 31,647 nursery trees. Infestations found on 93 trees on 3 properties in Linares, Nuevo Leon. Inspections of 5,059 trees on 310 properties in 4 municipios of Sonora and Baja California negative. (PPC Mex. Reg., Apr. Rpt.).

EUROPEAN CHAFER (Amphimallon majalis) - OHIO - Grubs averaged one per square foot in 185th Street area of Cleveland week of April 7. (PPC Cent. Reg.).

GYPSY MOTH (Porthetria dispar) - RHODE ISLAND - Still in first instar at Johnston, Providence County. (Mathewson, Merriam, May 31). MASSACHUSETTS - Larvae appeared on cranberry bogs, 2 weeks later than usual because of cold, wet spring. (Tomlinson, June 2).

MEXICAN FRUIT FLY (Anastrepha ludens) - MEXICO - In Municipios Ensenada, Tecate, and Tijuana, Baja California, 2,895 trap servicings made on 710 traps on 703 properties. Total of 22 marked specimens (9 females, 13 males) recovered in Tijuana. No unmarked flies trapped. Weekly releases of irradiated pupae initiated April 14 at Tijuana; subsequent releases made April 21 and 28. Total of 2,450,000 pupae released in April; 64 release points used. Adult emergence for these 3 releases averaged 89.1 percent. (PPC Mex. Reg.).

ORIENTAL WOOD BORER (Heterobostrychus aequalis) - FLORIDA - Larvae and adults collected in "light mahogany lumber" at commercial lumberyard in Tampa, Hillsborough County, June 7. (Todd, Hale). This is a new county record. (Fla. Coop. Sur.).

PINK BOLLWORM (Pectinophora gossypiella) - ARIZONA - Moth catches in sex lure traps again increased in all areas, but Cochise and Pima Counties. Larval finds increasing in blooms and small squares in Yuma County and warmer areas of Maricopa County. (Ariz. Coop. Sur.). CALIFORNIA - High of 17 moths trapped in one night in center of Palo Verde Valley, Riverside County; high of 17 moths taken during same interval in cages in southern part of valley. First moth of season May 24 near Brawley, Imperial County. No moths in 50 traps in Cantil area, Kern County. Traps installed by county: Kern 174 in Bakersfield area; Kings 90; Tulare 163;

Fresno 130; Madera 41; Merced 26. Approximately 1,200 traps scheduled for San Joaquin Valley. (Cal. Coop. Rpt.).

WHITE-FRINGED BEETLES (Graphognathus spp.) - ALABAMA - Larvae damaging 3.5-acre peanut field in Geneva County. (Hartzog).

WHITE GARDEN SNAIL (Theba pisana) - CALIFORNIA - Fourth and final baiting of season underway in Manhattan Beach, Los Angeles County. No live specimens found in 27-block eradication area since third treatment. (Cal. Coop. Rpt.).

HAWAII INSECT REPORT

Pastures - A BILLBUG (Sphenophorus venatus vestitus) light to medium and causing moderate damage in scattered areas of Kikuyu grass pasturelands at Kaupakalua and Kaiku, Maui; larvae ranged 3-11 per square foot. (Miyahira, Funasaki, Nakao).

Vegetables - SMALL GARDEN SNAIL (Bradybaena similaris) heavy (up to 3 per square inch of leaf surface) on small plantings of broccoli, Chinese cabbage, and daikon in Lanai City, Lanai. Damage light. (Miyahira). Larvae and adults of LEAF MINER FLIES (Liomyza spp.) medium to heavy in cucumber and snap bean fields in Wailua, Kauai. Most persistent pests for past several months. (Au). MELON FLY (Dacus cucurbitae) population at unusually low levels in Kawaihau District of Kauai. (Au).

Ornamentals - SPOTTED GARDEN SLUG (Limax maximus) heavy and causing moderate damage in chrysanthemum and head cabbage fields in Kula, Maui. (Mori, Tamura). BLACK TWIG BORER (Xylosandrus compactus) infestations found in 6 of 25 commercial and private nurseries surveyed throughout Hilo, Hawaii Island, during May. Ranged light to medium on epidendrums, dendrobiums, and epicattleyas. Heavy infestation noted on bifoliate type cattleyas at one nursery. (Yoshioka).

Forest and Shade Trees - Nymphs and adults of a MIRID BUG (Rhinacloa forticornis) abundant on kiawe blossoms (Prosopis pallida) in Pearl Harbor and Waialae-Kahala areas of Oahu; 4-5 per flower spike. This insect first recorded in State in 1962. Known to damage many plants, including Acacia, corn, pepper, tomato, and lettuce. (Kajiwara). A PSYLLID (Psylla uncatoides) found for first time on Maui infesting Acacia koa at Olinda and Haiku and Formosa koa at Kahului; averaged 5, 5, and 1 per sweep, respectively. Averaged 2 per sweep on 10 Formosa koa trees in Waimanalo. (Funasaki, Miyahira, Nakao). A CONIFER APHID (Cinara carolina) light to medium in Kokee area of Kauai on slash pine and on other pine species, including loblolly and Monterey pines. Yellowing of needles common on some trees. (Au).

Man and Animals - Total of 1,221 Aedes vexans nocturnus and 8,373 Culex pipiens quinquefasciatus collected in 48 light traps operated by Mosquito Control Branch, Dept. of Health, on Oahu during May. Aedes counts highest on windward side of island. Highest Culex counts recorded at Nanakuli, Kahuku, and in Haleiwa and Waialua area. (Haw. Ins. Rpt.).

Beneficial Insects - LANTANA SEED FLY (Ophiomyia lantanae) infested 75 percent of lantana seeds collected in Kula and Ulupalakua area of Maui. (Miyahira, Ah Sam).

Miscellaneous Pests - GIANT AFRICAN SNAIL (Achatina fulica) - Surveillance and metaldehyde treatments continued at Kailua-Kona, Hawaii Island, and Wahiawa, Kauai, sites of recent discoveries. Total of 198 snails collected at Kailua-Kona and 76 at Wahiawa during May. Both infestations restricted to about 2 acres. (Yoshioka, Au). VAGRANT GRASSHOPPER (Schistocerca vaga) adults on weed hosts in farming areas of Waianae, Oahu, becoming common. Crop damage negligible. (Jackson, Funasaki, Ketchum).

INSECT DETECTION

New State Records

A FULGORID PLANTHOPPER (Epiptera opaca) - DELAWARE - Adults collected in blacklight trap at Dover, Kent County, August 28, 1965, by J. Franklin. Det. by J. P. Kramer. Recorded elsewhere as feeding on pine. (Burbutis).

A MELANDRYID BARK BEETLE (Phloeotrya vaudoueri) - DELAWARE - Adults collected in blacklight trap at Dover, Kent County, July 13, 1966, by J. Franklin. Det. by T. J. Spilman. (Burbutis).

A SCARAB (Diplotaxis sordida) - DELAWARE - Adult collected in blacklight trap at Dover, Kent County, August 18, 1966, by J. Franklin. Det. by O. L. Cartwright. (Burbutis).

TWIG GIRDLER (Oncideres cingulatus) - DELAWARE - Adult collected in blacklight trap at Dover, Kent County, September 19, 1966, by J. Franklin. Det. by G. B. Vogt. (Burbutis).

New County and Island Records

ALFALFA WEEVIL (Hypera postica) - NEW YORK - Oswego County in CEIR 17(22):458. Livingston County in CEIR 17(23):480. MICHIGAN - Cass, Berrien, and Clinton Counties. OHIO - Warren, Henderson, Mercer, Boone, McHenry, and Mason Counties. (p. 506).

MEADOW SPITTLEBUG (Philaenus spumarius) - MISSOURI - Boone County. (p. 508).

NATIVE ELM BARK BEETLE (Hylurgopinus rufipes) - NORTH DAKOTA - At Wishek, McIntosh County. (p. 518).

CEREAL LEAF BEETLE (Oulema melanopus) - INDIANA - Ripley and Bartholomew Counties. (p. 522).

ORIENTAL WOOD BORER (Heterobostrychus aequalis) - FLORIDA - At Tampa, Hillsborough County, June 7. (p. 522).

A PSYLLID (Psylla uncatoides) - HAWAII - Maui. (p. 51).

Insect Detection in Canada

Individual specimens of CEREAL LEAF BEETLE (Oulema melanopus) collected in 4 Townships of Essex County, Ontario, immediately across the Detroit River from Michigan, U. S. A. Single specimen also collected in Lambton County, adjacent to St. Clair River. ALFALFA WEEVIL (Hypera postica) found for first time in eastern area; 2 specimens found in Haldimand County on north shore of Lake Erie, and one specimen in Welland County at Niagara Falls. (D. S. MacLachlan).

CORRECTIONS

CEIR 17(22):457-458 - WIREWORMS - IDAHO - Ctenicera glauca should read Ctenicera callida. Det. by M. C. Lane. (Portman).

CEIR 17(23):494 - HAWAII INSECT REPORT - Vegetables - Line 6: (Liomyza spp.) - should read (Liriomyza spp.) -

LIGHT TRAP COLLECTIONS

- 525 -

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